

**What is claimed is:**

1. A method of connecting at least two users via an internetwork, each user having a respective assigned IP address for said internetwork and a respective assigned telephone identifier number for a public-switched telephone network, said method  
5 comprising the steps of:

maintaining in a server coupled to said internetwork a database of registered users, said database including for each registered user a respective telephone identifier number and a respective IP address;

10 receiving an access request in said server to establish a data transfer to a desired user on said internetwork, said access request including a target telephone identifier number associated with said desired user;

comparing said target telephone identifier number with said telephone identifier numbers in said database; and

15 if said target telephone identifier number is found in said database, then forwarding an initiation message to said desired user using a respective IP address stored in said database.

20 2. The method of claim 1 wherein said access request identifies a requesting user who is a registered user, and wherein said server sends said IP address of said desired user to said requesting user.

25 3. The method of claim 1 wherein said access request identifies a requesting user who is a registered user, and wherein said server sends said IP address of said requesting user to said desired user.

4. The method of claim 1 wherein said data messages are exchanged between said users through said server.

5. The method of claim 1 wherein said data messages are comprised of computer files.

6. The method of claim 1 wherein said data messages are comprised of video data.

7. The method of claim 1 wherein said access request identifies to said server a requesting user who is a registered user, and wherein said initiation message identifies said requesting user to said desired user.

8. The method of claim 7 wherein said desired user sends an accept message in response to said initiation message if said desired user wishes to exchange said data messages with said requesting user.

9. The method of claim 8 wherein said server causes exchange of said data messages only after receiving said accept message.

10. The method of claim 1 further comprising the step of:  
adding a new registered user to said database in response to a registration request, wherein said registration request includes a respective IP address assigned to said new registered user.

11. The method of claim 1 further comprising the step of:  
adding a new registered user to said database in response to a registration request, wherein said registration request includes a respective telephone identifier number assigned to said new registered user.

12. The method of claim 1 wherein said access request is initiated by an integrated access device which identifies said target telephone identifier number in

response to a call placed to said desired user over said public-switched telephone network.

13. The method of claim 1 wherein said server controls a private branch exchange (PBX) connected to said public-switched telephone network, said method further comprising the step of:

said server commanding said PBX to establish a call using said target telephone identifier number.

14. The method of claim 13 wherein said server sends said initiation message after said PBX call is answered.

15. A method of exchanging data between two individuals over an internetwork, said method comprising the steps of:

a first individual logging-on to a central server with a first computer coupled to said internetwork so that said central server registers a first IP address and a first telephone number associated with said first individual;

a second individual logging-on to said central server with a second computer coupled to said internetwork so that said central server registers a second IP address and a second telephone number associated with said second individual;

initiating a telephone call between said first individual and said second individual, said second individual being a called party of said telephone call;

sending an initiation message from said central server to said second IP address;

sending an approval message from said second individual to said central server; and

exchanging said data according to said first and second IP addresses.

16. The method of claim 15 wherein said telephone call is initiated by said first individual as a calling party using a first telephone, wherein said first computer sends an access request including said second telephone number to said central server in response to said initiation of said telephone call, and wherein said central server  
5 selects said second IP address in response to said second telephone number.

17. The method of claim 16 wherein said first telephone is coupled to an integrated access device, said integrated access device sending said second telephone number to said first computer.  
10

18. The method of claim 15 wherein said telephone call is initiated in response to an access request received by said central server over said internetwork, wherein said access request identifies said first and second individuals, and wherein said server initiates said telephone call using a public branch exchange (PBX).  
15

19. The method of claim 15 further comprising the steps of:  
sending said first IP address to said second computer; and  
sending said second IP address to said first computer;  
whereby said data is exchanged between said first and second computers  
20 without passing through said central server.

20. The method of claim 15 wherein said central server relays said exchanged data between said first and second computers, whereby said first and second computers exchange said data without direct access to the IP address of the  
25 other.

21. A method of operating a user system for data transfer, the method comprising:

receiving a called telephone number contemporaneously used to establish a telephone call between a caller and a called party over a public telephone network wherein the caller is associated with a caller telephone number and the called party is associated with the called telephone number;

5 in response to receiving the called number, generating and transferring a first message to a public data network for delivery to a server system wherein the first message indicates the called telephone number;

receiving and processing a second message from the public data network indicating that caller data can be transferred;

10 in response to processing the second message, transferring the caller data to the public data network for delivery to the called party.

22. The method of claim 21 wherein the public data network delivers the caller data to the server system, and the server system transfers the caller data over the public data network to the called party.

23. A user system for data transfer over a computer network, the user system comprising:

20 a control system configured to receive a called telephone number contemporaneously used to establish a telephone call between a caller and a called party over a public telephone network wherein the caller is associated with a caller telephone number and the called party is associated with the called telephone number; and

25 a data communication system configured to generate and transfer a first message indicating the called telephone number to a public data network for delivery to a server system in response to receipt of the called number, to receive and process a second message from the public data network indicating that caller data can be transferred, and in response to the second message, to transfer caller data to the public data network for delivery to the called party.

24. The user system of claim 23 wherein the public data network delivers the caller data to the server system, and the server system transfers the caller data over the public data network to the called party.

5

25. A software product for data transfer over a computer network, the software product comprising:

software configured to direct a processing system to receive a called telephone number contemporaneously used to establish a telephone call between a caller and a called party over a public telephone network wherein the caller is associated with a caller telephone number and the called party is associated with the called telephone number, to generate and transfer a first message indicating the called telephone number to a public data network for delivery to a server system in response to receipt of the called number, to receive and process a second message from the public data network indicating that caller data can be transferred, and in response to the second message, to receive caller data and transfer the caller data to the public data network for delivery to the called party; and

10

15

a storage system that stores the software.

20

26. A method of operating a server system for data transfer over a computer network, the method comprising:

25

receiving a first message indicating a called telephone number from a public data network wherein a caller is associated with a caller data address and a caller telephone number, wherein a called party is associated with a called party data address and the called telephone number, and wherein the called telephone number is contemporaneously used to establish a telephone call between the caller and the called party over a public telephone network;

processing the called telephone number from the first message to determine if the called party will receive caller data; and

if the called party will receive the caller data, transferring a second message to the public data network for delivery to the called party wherein the second message indicates that the caller data will be transferred to the called party, and transferring a third message to the public data network for delivery to the caller wherein the third message indicates that the caller data will be delivered to the called party.

27. The method of claim 26 further comprising receiving the caller data from the public data network, addressing the caller data to called party data address, and transferring the caller data to the public data network.

10

28. A method of operating a server system for video telephony, the method comprising:

maintaining a database of user telephone numbers and associated user data addresses;

15 maintaining individual indications if individual ones of the users will receive data; and

establishing data exchanges between callers and called parties over a public data network in response to messages indicating called telephone numbers contemporaneously used to establish telephone calls between the callers and the called parties over a public telephone network.

20

29. The method of claim 28 wherein establishing the data exchanges comprises receiving the data from the public data network into the server system, addressing the data from the callers to the called parties, addressing the data from the called parties to the callers, and transferring the data to the public data network for delivery to the callers and called parties based on the addressing.

25